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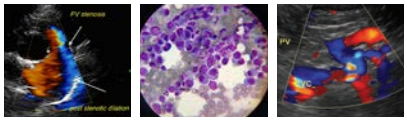

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**DATE**

10/27/22

**PATIENT**

Coltrane Conarck

**SPECIES**

Canine

**BREED**

Terrier X

**SEX**

Neutered Male

**AGE**

9/6/11

**WEIGHT**

46.6 Pounds

**INTERPRETED BY**

Beth Johnson, DVM DACVIM

**IMAGING PERFORMED BY**

Stephanie Warga RDCS, RVT

**HOSPITAL NAME**

DocSide Vet Medical Center

**REFERRING VET**

Dr. Tierney

**INVOICE**

42438

## PRESENTING CLINICAL SIGNS

Dog has hx of episodes of diarrhea approx 1X/ mos, but recently getting more freq- had 3 episodes in last 10 days. Episodes decr in freq on RCVD GI LF but did not resolve. Hx of low B12 levels-was on B12 inj but owner grad tapered off and stopped them a long time ago. When dog lived w/ grandmother in Connecticut X 3 mos had no diarrhea.

Current Medications: Panacur, metronidazole, Probiotic, B12, Z/D diet
Lab Results: B12: 409 WNL, Folate: > 24.0 (N=7.7-24.4), TLI: 24.7 WNL
UA: SpG: 1.035, pH: 6.5, Prot: trace, All other UA WNL
T4: 1.2 WNL. Superchem: WNL, CBC: WNL, Creat 1.2 WNL, BUN 24 WNL. Negative fecal result, CPL normal
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots. The debris has the appearance of sand/mineral debris, including some sand debris within the proximal urethra. Small cystoliths cannot be definitively ruled out. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

The right kidney is normal in size (5.76 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted.

The left kidney is normal in size (6.35 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted.

### *Adrenal Glands*

The right adrenal gland is normal in size (2.7 cm long x 0.81 cm at the cranial pole and 0.68 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (3.1 cm long x 0.73 cm at the cranial pole and 0.87 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

### *Spleen*

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

### *Liver*

Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. The liver contains a

hypoechoic nodule in the left caudal liver measuring 1.0 cm x 2.0 cm. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

### *Gastrointestinal*

The visible stomach wall is normal in thickness and layering. The stomach is moderately distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. However, given the reported history of fasting, delayed gastric emptying could be considered. Soft (cloth) fluid absorbing foreign material is considered less likely but cannot be definitively ruled out. If clinical signs are consistent (vomiting, etc.), recommendations include supportive medical care, 24 hours fasting and re-image.

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

### *Pancreas*

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

### *Free Abdomen*

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

## PRIMARY FINDINGS

- **Hyperechoic hepatomegaly -** This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible but considered less likely.

- **Liver nodule –** Differentials for a discrete liver nodule include primarily benign changes such as nodular hyperplasia, fibrosis of an old hematoma, granuloma, etc.; however, while considered less likely, primary hepatic neoplasia, infiltrative round cell neoplasia and metastatic disease can mimic benign lesions and cannot be definitively ruled out.

- **Urinary bladder debris including sand/mineral debris within the urethra** – Small urinary bladder cystoliths are suspected.

## SECONDARY FINDINGS

- Non-obstructive nephrolithiasis bilaterally

- **Gallbladder debris -** Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in

combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

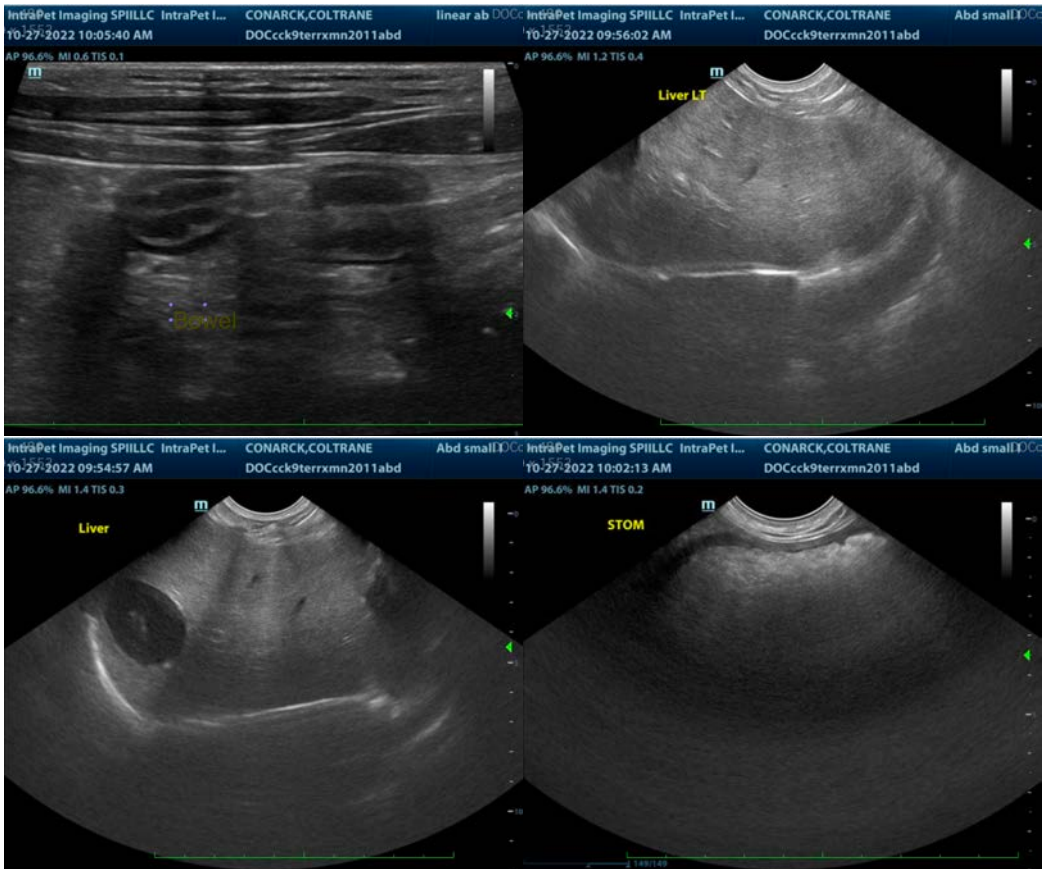
Given this patient's malabsorption panel results of a low-normal cobalamin and high folate, bacterial overgrowth or a GI biome dysbiosis is suspected, potentially secondary to an underlying infiltrative bowel disease and/or infectious and/or parasitic disease. Therefore, recommendations include:

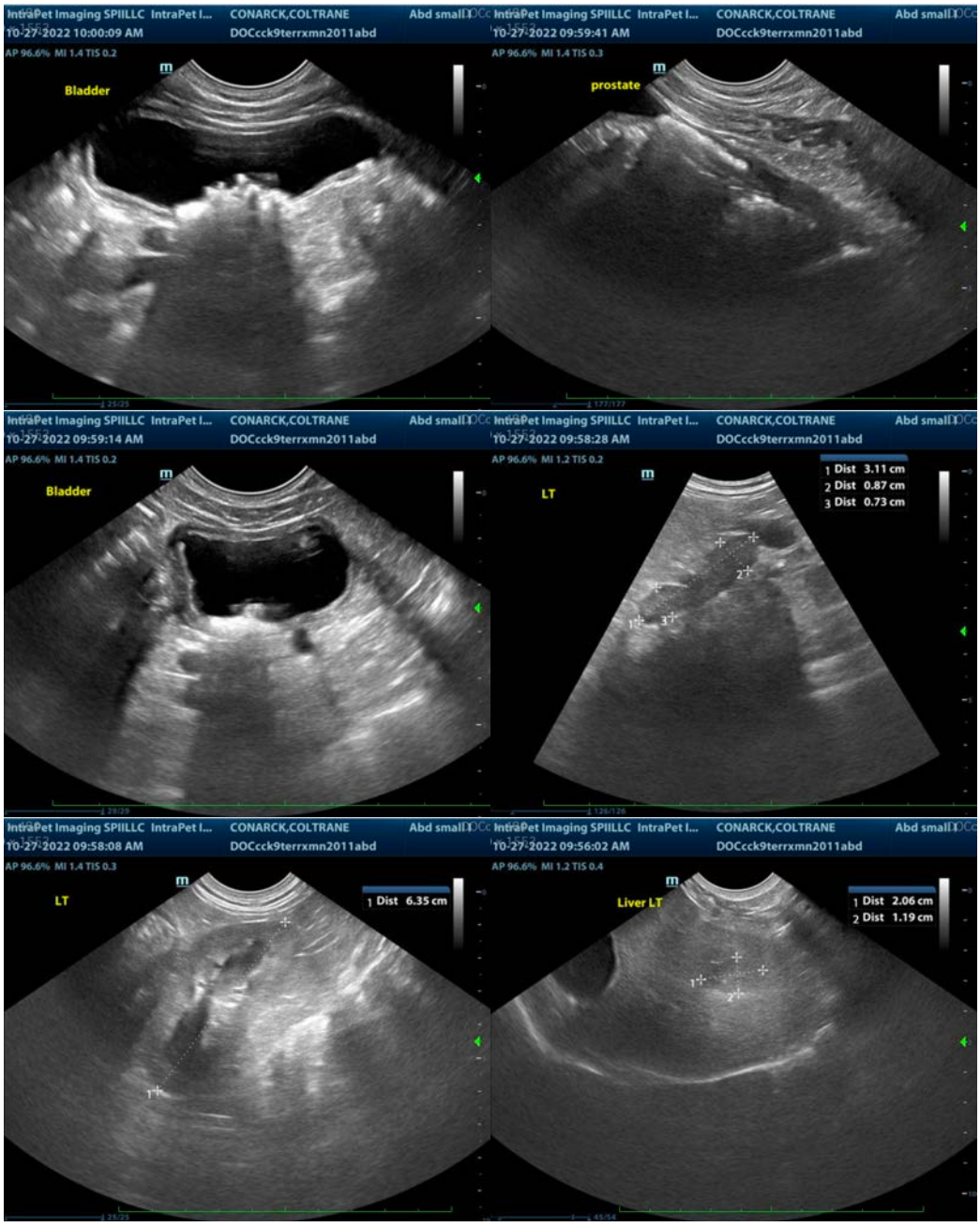
A fecal enteropathogen PCR panel to Texas A&M GI Laboratory could be considered for further evaluation of possible infectious disease, followed ideally by gastrointestinal biopsies if a diagnosis is not obtained from the PCR panel.

In the meantime, transition from a z/d diet either to another hydrolyzed diet, as many patients respond better to a Royal Canin or Purina version if diarrhea remains present on the z/d, or potentially a biome diet could be considered.

Some patients respond well to a fecal transplant with evidence of chronic diarrhea and bacterial overgrowth.

Additionally, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

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Bladder
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prostate
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LT
1 Dist 3.11 cm
2 Dist 0.87 cm
3 Dist 0.73 cm
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AP 96.6% MI 1.2 TIS 0.4
Liver LT
1 Dist 2.06 cm
2 Dist 1.19 cm


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

**Beth Johnson**, DVM, DACVIM
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